

MEMORANDUM OF UNDERSTANDING

Between

The Montana University System

And

The State of Montana

August 7, 2012

This is an agreement between the Montana University System (MUS), specifically The University of Montana-Missoula (UM), and the Montana State Information Technology Services Division (MT-SITSD) relative to the State of Montana's obtaining network services from the MUS. This Memorandum of Understanding dated August 7, 2012 terminates the Memorandum of Understanding between the above mentioned entities dated June 1, 2012 in its entirety.

Purpose and Scope

The purpose of this MOU is to clarify that all parties concerned agree in principle that the State of Montana, through the Department of Administration, (MT-SITSD) will purchase use of network services provided by the UM through Internet2 (I2) contracts. This MOU specifies the contract terms, dates, costs, and each party's obligations relative to this provision of services. The governing document for this MOU is the I2/UM contract and all clauses pertinent to the use of, payment for, and termination of the network services apply to this agreement.

Background

I2, a not-for-profit advanced networking consortium comprising over 220 universities, is contracting with a commercial firm, Zayo, for the provision of high capacity bandwidth from Chicago to Seattle in fulfillment of an NSF grant. In return for grant funding, Zayo is offering I2 members access to 10Gb network segments along the Chicago to Seattle route at very competitive rates. The initial I2/Zayo contract is for five years but can be extended through three one-year contract extensions.

The bandwidth to be provided by Zayo to I2 members is commercial, production grade fiber with no restrictions in terms of use preventing the agreements contained within this agreement. I2/Zayo have agreed that I2 members may pass along use of this fiber and the associated pricing. UM is a member of the I2 member consortium and therefore has access to the I2 network services contract with Zayo through which UM can provide the state of Montana with 10Gb capacity in network services for use in MT-SITSD's network system.

Network Services

It is agreed that:

- UM will contract with I2 for 10Gb capacity on the following segments for a period of 5 years beginning August 7, 2012, or as soon as the contract is signed by both I2 and UM:

- Missoula to Helena
- Helena to Bozeman
- Bozeman to Billings
- Billings to Miles City
- Helena to Miles City
- UM may contract with I2 for 10Gb capacity from Miles City to Missoula via Chicago and Seattle as instructed by MT-SITSD.

Costs

It is agreed that the costs include:

- Contract costs per the Internet2/UM contract including all taxes and fees – attached.
- A onetime fee of \$50K payable by MT-SITSD to UM for setup costs.
- An ongoing management fee of \$30K per year payable by MT-SITSD to UM.

All parties agree that this is a firm commitment to proceed as outlined in principle above and will therefore commit the required resources now and in the future to implement this agreement. UM will notify all parties concerned of any cost increases that may impact this agreement within 30 days of becoming aware of any such an increase.

Obligations

The UM commits to:

- Continue membership with I2, paying all membership fees on a timely basis.
- Pay the network fees established in the I2/Zayo contract for network capacity allocated to the state and will invoice MT-SITSD accordingly.
- Maintain valid contracts to support the network services being purchased as a result of this MOU.
- Give MT-SITSD a nine month advance notice of any plans to discontinue any contracts supporting the network services being purchased as a result of this MOU.

The MT-SITSD commits to:

- Reimburse UM for all fees, one-time and on-going, associated with the purchase of network service capacity for MT-SITSD use plus a UM management fee.
- Work directly with the commercial vendor to resolve network issues, notifying UM as appropriate.
- Work directly with the commercial vendor to design and implement the Miles City segment of the network.
- Notify UM of any required change in services, extensions to contracts or other modifications in a timely manner such that UM can comply with I2 contract requirements.

- Work directly with the iConnect or other facilities to establish and pay for any required cross-connections.
- Inform UM so that written agreement may be obtained from I2 if external third-parties wish to contract with MT-SITSD to utilize the network services covered under this MOU.

Indemnification.

MUS and UM shall defend and indemnify the MT-SITSD, its officials, agents, and employees, while acting within the scope of their duties as such, from and against all claims, demands, causes of action of any kind or character, judgments, fees and expenses, including the cost of defense, in favor of the owner of the network service or other users of the network service arising from the MUS and UM -- and/or its agents, employees, representatives, assigns, contractors, or subcontractors use of the I2/Zayo provided network service. This indemnification applies to those situations excluded from the Montana tort claims statutes, 2-9-101 et seq., MCA. MT-SITSD shall defend and indemnify the MUS and UM, its officials, agents, and employees, while acting within the scope of their duties as such, from and against all claims, demands, causes of action of any kind or character, judgments, fees and expenses, including the cost of defense, in favor of the owner of the network service or other users of the production grade fiber arising from MT-SITSD's-- and/or its agents, employees, representatives, assigns, contractors, or subcontractors use of the I2/Zayo provided network service. This indemnification applies to those situations excluded from the Montana tort claims statutes, 2-9-101 et seq., MCA.

Applicable Law.

Each party shall comply with all applicable federal, state, or local laws, rules, and regulations. In accordance with section 49-3-207, MCA, each party agrees that the hiring of persons to perform their respective duties under this MOU will be made on the basis of merit and qualifications, and there will be no discrimination based upon race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, or national origin.

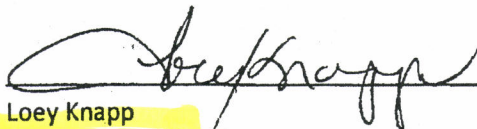
Termination

Either party may terminate this agreement prior to commencement of any purchases or physical changes to any existing networks, equipment, or software if fulfillment of the obligations herein are determined to be prohibited by law or contractual obligations with a third party. In the event of such termination, all funds will be returned in full to MT-SITSD within a reasonable time using approved refund or return processes employed by UM. MT-SITSD or the University System must terminate this agreement if funds are not appropriated or otherwise made available to support MT-SITSD's or the UM continuation of performance of this agreement in a subsequent fiscal period. Both parties agree to give the other 30 days written notification of termination of this agreement. Both parties also agree that the section 2 of the I2/UM contract that specifies contract termination language will govern this agreement for MT-SITSD use of the I2/Zayo provided network service.

AMENDMENTS

Except as may otherwise provided herein, any amendments or modifications to this MOU must be in writing and signed by an authorized officer of UM and an authorized officer of MT-STSD

SIGNATURES



Loey Knapp

Interim CIO – University of Montana

8.10.12

Date



Tyler Trevor

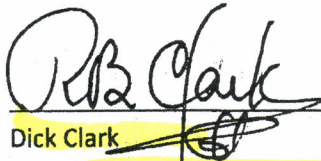
Deputy Commissioner

Commissioner of Higher Education

Board of Regents Montana University System

8-08-12

Date



Dick Clark

CIO – State Information Technology Services Division

Montana Department of Administration

8-7-12

Date

Ann Arbor, MI 48104

University of Montana
Stan Harris
ACIO, Network Services
University of Montana
32 Campus Drive
Missoula, Montana 59812

Stuart Fuller
State Information Technology Services Division
Dept. of Administration
125 N. Roberts
Helena, MT 59620

21) **COUNTERPARTS:**

This Agreement may be executed in several counterparts, each of which shall constitute an original, but all of which shall constitute one and the same instrument.

22) **COMPLIANCE WITH LAWS:**

During the term of this Agreement, the Parties shall comply with all local, state and federal laws and regulations applicable to this Agreement and to their respective businesses. Further, each Party shall obtain, file and maintain any tariffs, permits, certifications, authorizations, licenses or similar documentation as may be required by the Federal Communications Commission, a state Public Utilities or Service Commission, or any other governmental body or agency having jurisdiction over its business. Upon reasonable request, a Party shall supply copies of such permits, certifications, authorizations, licenses and similar documentation.

23) **THIRD PARTY:**

The provisions of this Agreement and the rights and obligations created hereunder are intended for the sole benefit of Internet2 and Customer, and do not create any right, claim or benefit on the part of any person not a Party to this Agreement, including end-users.

24) **AMENDMENTS:**

Except as may otherwise be provided herein, any amendments or modifications to this Agreement must be in writing and signed by an authorized officer of Internet2 and an authorized officer of Customer.

25) **UNENFORCEABILITY OF PROVISIONS:**

The illegality or unenforceability of any provision of this Agreement does not affect the legality or enforceability of any other provision or portion. If any provision or portion of this Agreement is deemed illegal or unenforceable for any reason, there shall be deemed to be made such minimum change in such provision or portion as is necessary to make it valid and enforceable as so modified.

By its signature below, each Party acknowledges and agrees that sufficient allowance has been made for review of this Agreement by respective counsel and that each Party has been advised as to its legal rights, duties and obligations under this Agreement.

By _____
Signature

Printed Name

Title

Date

By _____
Signature

Dr. Loey Knapp _____
Printed Name

Interim Chief Information Officer _____
Title

Date

Master Services Agreement - Schedule 1

Circuit Description and Fees

Customer agrees that the Circuit(s) as described below is (are) to be provided by Internet2 and Customer agrees to pay Internet2 the associated fees for the Circuit(s) and all other items listed in this Schedule:

Summary and Fee Table:

A Loc City	Address A Loc	End Site	Z Loc City	Address Z Loc	End Site	Annual Recurring Charge	Installation Port Charges
Missoula	UMT (Social Sciences Bldg)	Direct	Helena	1317 N Last Chance Gulch	Iconnect	\$27,500	\$73,700
Helena	1317 N Last Chance Gulch St	Iconnect	Bozeman	MSU Renee Library	Direct	\$27,500	\$73,700
Bozeman	MSU Renee Library	Direct	Billings	222 N 32nd St	Iconnect	\$27,500	\$73,700
Billings	222 N 32nd St	Iconnect	Miles City	114 S Haynes Ave	Direct	\$27,500	\$73,700
Helena	1317 N Last Chance Gulch St	Iconnect	Miles City	114 S Haynes Ave	Direct	\$27,500	\$73,700
Miles City	Not to exceed fee to extend Network from Zayo Pop to Miles City Data Center						\$670,000
Totals						\$137,500	\$1,038,500

Miles City is not an current on-net location for Zayo. Zayo has estimated construction costs to be in the neighborhood of \$15/per foot for an estimated 44,500 feet of construction. Customer agrees to pay Zayo for an ammount not to exceed of \$670,000 for construction into the Miles City Data Center.

Conditions:

All Layer 3 (IP) connections are provided by local connectors; not Internet2. Any and all fees assessed by the local connector are not included in this Schedule and are the responsibility of the Customer.

Colocation, power, cross-connects, installation, equipment, local connection charges including but not limited to local loops and laterals, and any and all other fees are additional. These items are the sole responsibility of the Customer.

A Customer Circuit order does not imply a connection to the Internet2 IP network or a connection to the Internet2 Dynamic Circuit network.

No IP services or other Circuit network services are part of this agreement and nothing in this agreement shall be construed or understood to that effect.

A month is thirty (30) days. A year is three hundred-sixty-five (365) days.

The Term of the circuit begins on the Start Date, unless otherwise agreed by both Parties in writing, and shall terminate upon the Term expiration.

Master Services Agreement - Addendum 1

Internet2 acknowledges that the University of Montana will assign the right to use the circuits detailed in Schedule 1 to the State of Montana and approves this use.



Internet2 Network Acceptable Use Policy (AUP)

Quick Links

- Carrier-class Reliability
- Internet2 Network NOC
- Network Characteristics
- Network Contacts
- Network Fee Structure
- Network Research
- Network Security
- Value-added Capabilities

The Internet2 Network can be used for any legal purpose, so long as it does not interfere with or adversely affect the operation of the Internet2 Network or any network user, as may be determined by Internet2.

Internet2 reserves the right, through its published governance processes, to modify this AUP (and its posted guidelines or other rules) from time to time and intends to provide advance notice of any such modifications.

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Proposed Montana Project – US UCAN Pilot Affiliate Program

Montana Contact: Ray Ford - University of Montana

OVERVIEW

Although Montana's two research universities, The University of Montana (UM) and Montana State University (MSU), are long time active members of Internet2, Montana's involvement beyond that has been limited. For example, Montana is one of the few US states/territories without an Internet2 Sponsored Educational Group Participation (SEGP) program, and hence has been without national research and education connectivity for its broader K-20 community. That said, in recent years UM, MSU, and others have helped dramatically improve the networking infrastructure within Montana, so that the time is now right to undertake a concerted effort to enhance networking for K-20 and other "public serving" institutions. UCAN and the UCAN Pilot Affiliate Program will allow Montana to implement an organizational framework -- a UCAN Affiliate -- and use that organization to begin systematically connecting a wide range of community anchor institutions (CAIs), from a wide range of CAI types. Participants in Montana's proposed pilot project include The University of Montana, the Montana University System (representing UM and MSU, but also Montana's community colleges), Montana State IT (representing state government, including its public safety entities), and the Health Information Exchange of Montana (representing health care, and in particular FCC RHC PP award winners). With this core group we hope to build a solid organizational base and the core of a state-wide UCAN aggregation network, which will allow us to move on to address connectivity for K-12; other higher education sites; libraries, museums, and performing arts sites; local and regional government; and additional health care entities.

Montana recently has implemented several relevant networking projects on which it's pilot project will be based. The MT Pilot Project will leverage both the network infrastructure and the partnerships which helped create the infrastructure, recognizing that both are critical to long term success. Key elements are as follows.

(a) **Organizational Framework** Creating an appropriate MT-based Affiliate to coordinate state activity, and to work with a MT-based Internet2 Connector which serves as the point of contact with the national UCAN Program office.

(b) **Network Connection Framework** Building an appropriate network physically connected through the Connector to Internet2/UCAN infrastructure, and reaching out to facilitate CAI connections through infrastructure connected to aggregation points located across the state.

The key in a pilot is to achieve short term (demonstration) results that then feed into long term (sustainability) plans for serving a diverse set of MT CAIs by building and maintaining these two frameworks. The Plan to be followed in the MT Pilot is explained in more detail below.

ORGANIZATIONAL FRAMEWORK

The first specific challenge is to create an appropriate MT-based Affiliate organization to coordinate UCAN connectivity within the state, and to link that entity through a Connector to the national UCAN Program Office. MT has no existing SEGP and thus no organization or partnership that it can simply extend from SEGP to UCAN coordination. That said, it does have a number of existing partnerships that can and will be used as the basis for creating a Montana Affiliate, and it does now have a Connector that can link the Affiliate to "UCAN central". The partners in this activity are explained briefly below.

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- The Montana University System (MUS) and Montana State IT (MT-ITSD) – long term partnership to create and manage state wide networking with connectivity to MUS and State sites, including public safety.
- Montana's University System, three private colleges, three community colleges, seven tribal colleges, and the state-wide K-12 coordinating entity (Office of Public Instruction) – cooperation on a state-wide education programs and K-12 to higher education transition, and partnership to extend NTN connectivity to non-MUS higher education entities via an initial set of MUS network aggregation points.
- UM and the Health Information Exchange of Montana (HIEM) – cooperation on implementing HIEM's FCC RHC PP funded network and making excess bandwidth available to the MUS for compatible R&E uses.
- UM, MSU, the MUS, and comparable entities in Washington, North Dakota, Minnesota, Wisconsin, and Iowa – partnership to implement and manage the Northern Tier Network (NTN).
- UM and the University of Utah-Utah Education Network (UU-UEN) – partnership to create and manage an Internet2 Connector with presence in Montana, using the NTN and other infrastructure to reach Internet2 infrastructure in Seattle, Salt Lake City, and Chicago.

The specific plan is to form a Montana Affiliate by drawing initial representatives from the already connected MUS, community/tribal colleges, MT-IT, and HIEM. These groups are all now committed to cooperate on network management and in-state use, so extending this cooperation to also look at national connectivity is a natural next step. In addition to basic formation and operation issues, the primary short and long term challenges that Montana's new Affiliate will need to address include: (a) funding the UCAN (SEGP) membership fee; (b) funding base service for Affiliate members on the national network; (c) expanding existing MUS, State, and HIEM networking into a regional UCAN aggregation framework; and (d) expanding this framework to add, connect, and serve other CAIs.

As for the Connector requirement, UM will fill this role. Through its existing UT-MT Connector status and organizational connections it will provide liaison with the UCAN Program Office. Through its existing physical connections to Internet2 infrastructure in Seattle, Salt Lake City, and Minneapolis/Chicago, it will provide Internet2 connection service for Montana's connected CAIs.

NETWORK CONNECTION FRAMEWORK

The goal for the MT Project is to create an effective framework for the connection of a wide number and type of CAIs, with the following elements (building outside in).

- A Connector with Montana point of presence, linked to Internet2 infrastructure As noted above UM and its existing connections will fill this role.
- An in-state very high speed core network connecting aggregation points to the Connector We start with (i) the NTN with drop/add points in Missoula, Bozeman, Billings, and Miles City; (ii) State Network, HIEM-based, and other connections that reach all eight MUS campuses, three community colleges, and one tribal college; (iii) State Network connections to essentially all MT-IT sites; and (iv) HIEM-based connections to twelve health care sites. It is hoped that this can be expanded in two ways. First, funding will be secured to allow additional HIEM

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infrastructure to be added, extending the base MT UCAN aggregation network with Missoula/Kalispell, Kalispell/Libby, and Kalispell/Shelby segments, and comparable Kalispell, Libby, and Sheby aggregation points. Second, MT-IT will secure funding to allow the addition of a NT drop/add in Helena, enhanced integration of NTN and State Network facilities, and enhancement of State links to other parts of the state to serve both MT-IT needs and act as connections to UCAN aggregation points.

-Support for UCAN aggregation points As noted above, the MUS/MT-IT already support a set of aggregation points which can be generalized as UCAN aggregation points in Missoula, Bozeman, Billings, and Miles City, with the plan being to expand this set to include Helena, Kalispell, Libby, and Shelby. The plan is also to look at current State Network facilities and see if they can be expanded/broadened in a similar way, with specific focus on setting up connections and aggregation sites in other parts of Montana. This will include looking at existing State Network links to other MUS sites and key Montana population centers – Havre/MSU-Northern, Great Falls/MSU-Great Falls, Butte/UM-MTech, and Dillon/UM-Western. It will also include looking for a way to set up aggregation points in other central and north eastern parts of Montana (e.g. Lewistown, Glasgow/Wolf Point, Plentywood, and others).

-Support for CAI local loop connections The Plan focuses short term activity on what amounts to “harvesting low hanging fruit” represented by CAIs that would be relatively easy to connect – e.g. those CAIs that are nearby existing aggregation points (e.g. K-20 sites in Missoula, Bozeman, Billings, and Miles City) and those already connected to other private networks which could be “bridged” to the UCAN network (e.g. K-20 sites on “video conferencing networks” maintained by private providers). Longer term the idea is to use the pilot project’s organizational and network frameworks to support individual CAIs and groups of CAIs in their own efforts to secure funding for UCAN connection. A prime example here is a group of 40-plus public library sites which have received both Gates Foundation and BTOP/PCC funding for local networking enhancements, and might now seek additional funding for UCAN connectivity.

As noted above, with current activity MT is *a priori* guaranteed that it will be able, network transport wise, to connect the eight campuses of the MUS, the three community colleges, one tribal college, 12 health care delivery sites from HIEM, and appropriate State sites. Because we plan to “appropriately logically interconnect” rather than “physically rewire” the State, MUS, and HIEM networks, we will have to carefully address various security and performance concerns in blending these networks. Thus the extent of what we can achieve with the aggregation framework during the short pilot itself is unknown. But the MUS, MT-IT, and HIEM are committed to participate to the extent possible. We anticipate that many other new CAIs around the state will also want to participate, but given that their participation depends on the creation of appropriate transport (aggregation network and local loop connection), again the number of full connected new participants achieved during the pilot is unpredictable.

SUMMARY

In summary, the proposed MT Pilot Project offers the following potentially unique elements.

- Building a MT-based UCAN Affiliate from the ground up
- Coordinating activities for two states through a single Internet2 Connector (assuming that both MT and UT Pilots proceed)
- Demonstrating full involvement and participation by the state IT organization (MT-IT), including its public safety elements
- Demonstrating the full involvement and participation by a major FCC RHC PP award winner, including both participation of the health care sites but also the processes

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involved in utilizing FCC RHC PP funded infrastructure for this compatible but not health care specific use

The Project also would combine a number of interesting networking developments – traditional vendor based state networking, the NTN, the proposed Internet2/NTN 100Gb upgrade, FCC RHC PP funded efforts, and related NTIA/BTOP funded efforts. Because the bulk of these networking elements are or will soon be in place, successful connection of an initial, diverse collection of CAIs is largely dependent on organizational development, rather than network development. And because the new CAIs that are targeted come from the least understood (from the Internet2 perspective) CAI types of health care, community/tribal colleges, state/local government, and public safety (in MT largely part of state/local government), working through these organizational issues in MT could be potentially very useful to the national UCAN Office. The bottom line is that in MT we think the time is right for us to move forward, we think our project has a lot to offer, and we look forward to working with Internet2 and the national UCAN Office to launch and implement our project.

SUMMARY - PROJECT PARTICIPATION AND COMMITMENTS

Participation Representatives from UM (in the “convener” role), MUS, MT-IT, and HIEM, possibly others as the project evolves.

Tentative Project Timetable Start immediately. Continue through roughly June 30, 2012 for the creation of the Affiliate organization and network planning. Continue through roughly December 31, 2012 for execution of networking upgrades, initial operation of the Affiliate, and preparation of funding requests for the 2013 Legislature. Continue operational and legislative activity through June 30, 2013. Begin steady state operation in July 2013.

Project Resource Requirements/Commitments

Step 1 – Affiliate Creation UM, MT-IT, and MUS commit personnel time to lead the creation of the Affiliate organization. UM commits personnel time for Connector issues.

Step 2 – Network Design UM, MUS, MT-IT, and HIEM commit personnel time (network expertise) on an “as needed” basis to address technical issues.

Step 3 – Resource Issues UM, MUS, MT-IT, and HIEM commit personnel time to seek funding to address on-going resource issues.

Major Hurdles/Milestones

-Obtaining pilot funding for UCAN/SEGP member fee, integration of State Network with NTN-based MUS network, and broadening of MUS/State aggregation points to serve as UCAN aggregation points

-Obtaining in-principle buy-in from other key stakeholders, notably K-12, public library groups, various elements of state/local government, and other health care delivery groups

Anticipated Outcomes (Assuming the Hurdles are cleared)

-A viable, sustainable UCAN Affiliate to coordinate a MT UCAN connection program

-A viable UCAN core and aggregation network, serving a substantial portion of Montana, and connected to the national Internet2/UCAN infrastructure

-Connection of a diverse and significant collection of CAIs, drawn from various CAI types

Communications

State Economic Impact of rural telcos

Montana Rural Telecom Companies

Approximately

- 1,000 employees
- \$70 million payroll
- \$20 million taxes paid
- 20,000 miles of fiber
- \$133,000,000 annual CapEx 2011

